



JOINT OPERATIONS FOR THE 21ST CENTURY



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ABBREVIATIONS

ADF	Australian Defence Force
Defence	Department of Defence
EBO	effects-based operations
FJOC	Future Joint Operations Concept
MDM	Multidimensional Manoeuvre
NCW	network-centric warfare



FOREWORD

The Australian Defence Force stands in defence of Australia and our national interests. Our work is serious and difficult, and far too often, arduous and dangerous. We are called upon to perform diverse challenging tasks in fulfilling our mission – some very close to home and others further afield. The world in which we operate is complex and unpredictable, and we should not believe that our future will be any easier – in terms of the range of missions we perform or the operational tempo at which we operate.

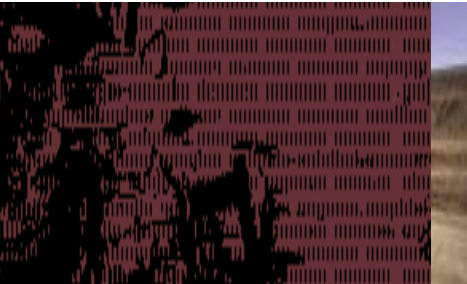
We have demonstrated an enviable ability to respond to these challenges, and these efforts have been ably supported by the wider Defence organisation. We have performed with distinction on operations for many years, and this has set a very high bar for future generations of Service men and women. To achieve ongoing success, however, we need to look toward the future and identify how we want to fight – we cannot simply rely on the practices of today being successful in the changing environment of tomorrow. Joint Operations for the 21st Century provides us with my vision for our future operations.

My vision is one where the ADF is a balanced, networked and deployable force, staffed by dedicated and professional people, that operates within a culture of adaptability and excels at joint and coalition operations. This document describes how we might best utilise the capabilities of this force to respond to the challenges, the opportunities and the uncertainties of the future in order to keep our country secure. Joint Operations for the 21st Century paints a picture of a joint force operating effectively as part of an integrated national response to events. This force will act to reach, know and exploit the future operating environment.

Thinking about how we will fight in the future is an important component of our work that influences everything we do in Defence. I strongly commend this document to you as a starting point for reflection. More work remains to be done, and I encourage you all to participate in an ongoing debate about the future of our force.

A handwritten signature in white ink, appearing to read 'A.G. Houston', with a horizontal line extending to the right.

A.G. HOUSTON AO AFC
Air Chief Marshal
Chief of the Defence Force
Canberra
May 2007



**OUR MISSION IS TO
DEFEND AUSTRALIA
AND OUR NATIONAL
INTERESTS.**

INTRODUCTION

THE AUSTRALIAN DEFENCE FORCE MISSION

Our purpose is very clear: we are responsible to the Government of Australia for the protection of Australia, our people and our national interests, whenever and wherever those interests lie. In undertaking this mission the Australian Defence Force (ADF) enabled by the Defence Organisation might act independently, or it might contribute to a broader effort of other Australian or international civilian agencies or military forces.

The 21st century promises a future whose shape is uncertain, and whose security and prosperity are challenged by dangers both seen and unseen. We must understand those dangers, and develop concepts and strategies to meet them, if we are to build on our successes today and position ourselves for ongoing success tomorrow.

The first few years of the 21st century have demonstrated that dangers can take many forms. Some dangers are traditional, and relate to state-on-state tensions over territory, resources or the balance and distribution of power. Some are old challenges in new guises, such as the emergence of new terrorist groups and pandemic diseases. Some challenges are entirely new, such as climate change and the impacts of global demography. And some are natural dangers, such as cyclones, earthquakes and tsunamis, to name just a few.

Whatever form the dangers take, the uncertainty of the future operating environment requires us to constantly challenge the orthodoxy, to innovate to solve old and new challenges, and to espouse and debate a new vision for the role of the ADF in the 21st century.





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THE CHIEF OF THE DEFENCE FORCE'S VISION

We need to excel at **joint, interagency and coalition operations** because this is our core business. Warfighting remains the core competency of the ADF. The future force must be able to win conflicts and secure the peace in complex operating environments.

All our operations will be **joint**. We must strive to go beyond operating jointly to operating in the seamless manner described in Force 2020. This will maximise our collective warfighting capabilities and specialisations.

Increasingly, the future force will conduct operations in conjunction with **interagency** and **coalition** partners. We have a strong record of meeting the challenges of interagency and coalition operations, both as a leader and as a participant. The future will present more challenges in this regard.

The creation of a culture that values **adaptability** will enable the future force to plan and conduct operations in uncertain, volatile, complex and ambiguous settings, as well as demonstrate the ability to self-modify and respond to events of fleeting time sensitivity.

The future force must have a **balance** in capabilities to respond to uncertainty in our strategic circumstances. We cannot afford to invest too heavily in a few 'niche' capability areas on the presumption that future operations will correspond to today's assumptions.

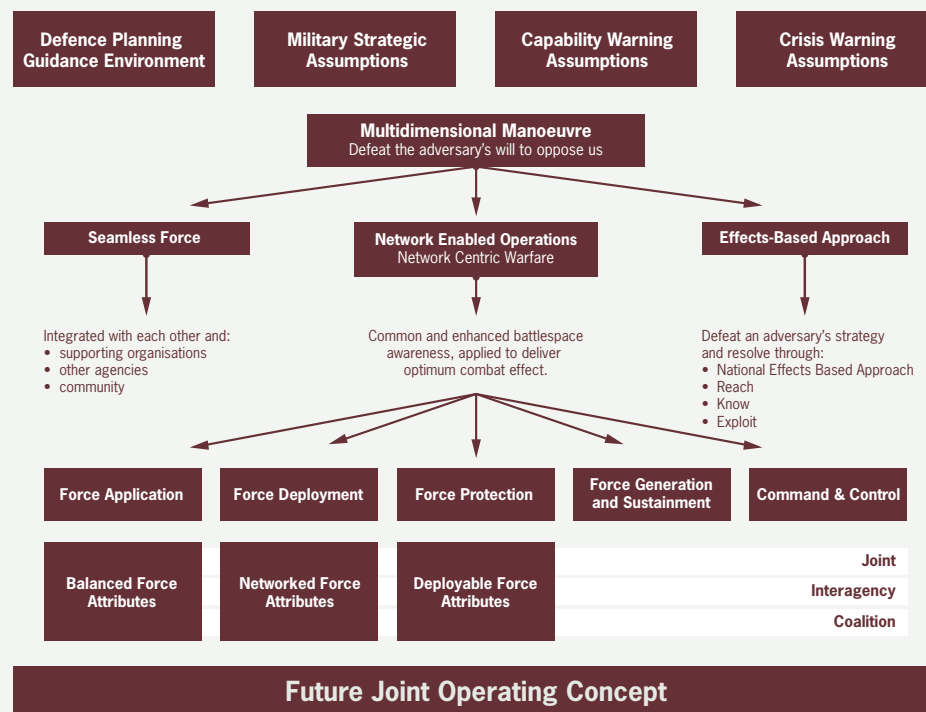
Improved **networking** will enhance our capability advantage over potential adversaries. In particular, we must exploit enhanced command and control capabilities and promote more effective human interaction within the Department of Defence (Defence). The Network Centric Warfare Roadmap addresses the challenges of building this network, particularly with respect to the human dimension.

We need to be **deployable** because defending and promoting Australia's national interests requires more than providing a defensive barrier in the air-sea gap to our north. We must be more engaged globally, because Australian interests are global. We can expect those interests to endure.

We need a **dedicated and professional workforce** because it is our people that generate the underlying capability advantage and the 'knowledge edge' that ensures the ADF is capable of getting the job done.



JOINT OPERATIONS FOR THE 21ST CENTURY



Joint Operations for the 21st Century provides an insight into how the future force will operate and describes attributes needed by this force to achieve its mission of protecting Australia and our national interests. In doing so, it provides broad guidance for the development and maintenance of the ADF.

Joint Operations for the 21st Century builds upon Force 2020 and replaces the Future Warfighting Concept, guiding principles released by previous Chiefs of the Defence Force. It is the first iteration of the Future Joint Operating Concept (FJOC), and provides an overarching concept for the future operation of the ADF to be supported by concepts describing the ADF's operation in the three major combat environments: the Future Maritime Operating Concept, the Future Land Operating Concept, and the Future Air and Space Operating Concept.

The FJOC is a component of the Strategic Planning Framework and is aligned with the current classified Defence Planning Guidance.

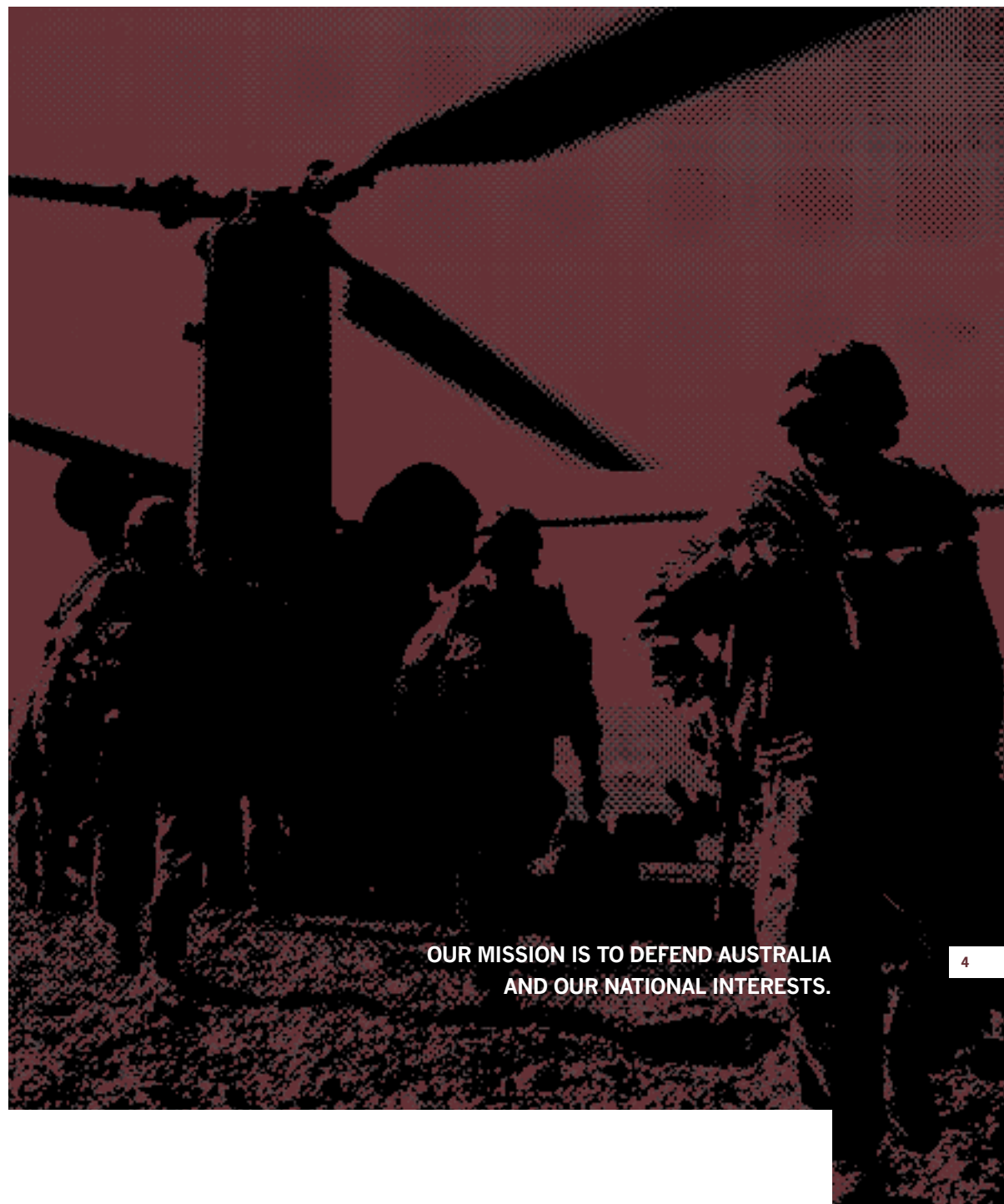
LOOKING TOWARDS 2030: THE APPLICATION OF MILITARY POWER IN THE FUTURE STRATEGIC ENVIRONMENT

THE OPERATING ENVIRONMENT

The ADF of today does not operate in a single environment; instead, we are deployed from urban environments to jungles, from deserts to mountains. We operate in the midst of populations, in the airspace above them and far out at sea. This will continue to be the case well into the future.

For the foreseeable future, armed force remains a key factor in international affairs, and we cannot guarantee that Australia will remain free from credible threat in the long term. While the international system can act to constrain the use of force, we cannot dismiss the possibility of major conflict between states.

Other threats to Australia's territorial integrity, sovereignty and broader national interests could also challenge Australia's security in a way that requires the application of military force. Global factors (such as terrorism, pandemic disease, resource depletion and the security impacts of climate change) and regional factors (such as state fragility, poor governance and economic underdevelopment) may affect Australia's security interests, both directly and indirectly. These threats may be compounded by factors such as the impacts of globalisation, the rise of new military powers, newly emerging technologies, or the growth in other non-traditional challenges.



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Singly, any one of these threats could disrupt the military balance between states or present non state actors with an opportunity to challenge state power. Together they shape the new security environment within which the ADF must operate.

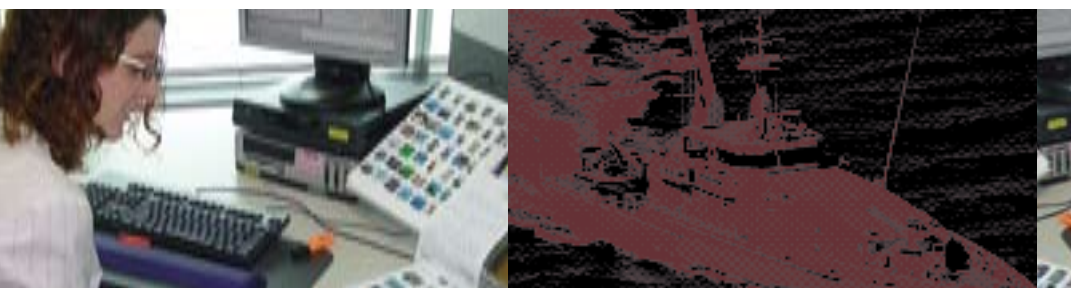
The Australian Approach to Warfare stresses that:

our warfare concepts reflect Australia's particular geographic environment, military and economic resource constraints, the opportunities offered by technological change and innovation, and the professionalism and fighting spirit of our defence force. The Australian Defence Force needs to be aware of, and adapt to, changes to these factors. Forces must be able to innovate and improvise to overcome obstacles, whether operational, logistic or human, and achieve coherence across all levels of command. Australia's limited resources put a premium on professional skill, delegation and initiative, and a robust command, control, communications, intelligence, surveillance and reconnaissance system so as to make decisions better and more quickly than an adversary.

The ADF must adapt to the future operating environment in order to maintain and build its unique and effective approach to warfare. Understanding the future operating environment is at the heart of that challenge.

While war will continue to involve the application of organised force in combat environments, the conduct of joint warfare will include both violent and non-violent applications of military power. Increasingly, the ADF must be capable of both executing effective combat operations and providing military support to national responses in more complex environments. In 2030, the ADF will be able to do the following:

- a. defend Australian territory against credible threat without relying on the combat forces of other countries, in keeping with long-standing Government policy
- b. provide joint forces to contribute to, or lead, coalition operations in Australia's neighbourhood
- c. contribute to coalition operations further away
- d. support United Nations activities and honour other longstanding multinational commitments
- e. contribute to crisis response as part of a coalition effort in humanitarian assistance and disaster relief
- f. routinely work with other government departments to provide options to Government to protect and promote Australian interests
- g. provide regional situational awareness to a global commitment of military force.



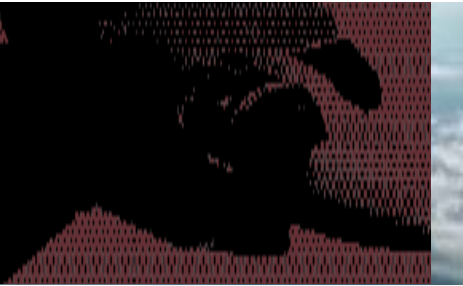
To carry out these roles, the ADF of 2030 must be able to deploy forces responsively and rapidly, throughout our region and beyond. That will require a measured and orderly transition from a force heavily weighted to countering a conventional threat against Australian territory to a more adaptable and agile force that can conduct mid- to low-intensity operations as readily as it can high-intensity ones. The ADF must move to develop a hardened, networked, deployable joint force that is characterised by adaptability and agility to handle the full range of military operations across the full spectrum of conflicts.

THE MILITARY CHALLENGE

The capabilities of our future adversaries will determine how we operate in 2030. In particular, rapid rates of technological change with respect to military capability and the altering human organisation of warfare pose substantial military challenges for the future ADF.

The rate of technological innovation will continue to accelerate, which will lead to shorter life cycles of technologies. Opportunities will present themselves for less-developed nations to quickly and intelligently invest in new technological fields in order to rapidly match, or leapfrog, the forces of developed nations such as Australia. In addition, the global economy and the rapidly reducing cost of technology will increasingly enable non-state actors to leverage technology as a force multiplier. Particularly, the ADF should be prepared to face adversaries who utilise the following capabilities:

- readily available 'low-tech' capabilities, such as informal communications technologies that are cheap, ubiquitous and difficult to trace, which will challenge our efforts to control the battlespace
- increasingly secure and sophisticated networked command and control and intelligence, surveillance and reconnaissance systems, leveraging commercial satellite capabilities and improved geospatial information, which will enhance lethality and precision
- increasingly available conventional platforms that enhance lethality, survivability and deployability – these include submarines, advanced multi-role fighters, and mobile ground forces with better armour, increased firepower and better targeting systems
- increasingly available Advanced Conventional Weapons and, potentially, Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) weapons.



In terms of human factors, the social revolution in warfare will continue to gather pace. Increasingly, land forces will adopt 'Special Forces' characteristics, with an emphasis on precision and stealth, and there will be new demands on air forces to support such operations. New organisational structures, doctrines and concepts will emerge as armed forces seek to define their new missions and roles. Demographic trends in neighbouring countries suggest that potential adversaries will not suffer from the same difficulties as the ADF has experienced in recruiting and retaining sufficient personnel.

The increasing lethality and precision within certain battlespaces (particularly those principally suited for maritime and air force elements) means that we seek to reduce both the footprint and the vulnerability of deployed forces. This 'emptying' of certain battlespaces will place reliance on unmanned systems and on force protection measures. At the same time, the ADF should expect to be involved in a larger number of low-intensity operations, particularly stabilisation operations, which require a demonstrably visible presence on the ground. This tension between force presence and force protection will be a principal issue for the ADF in the foreseeable future.

THE NATIONAL CHALLENGE

An enduring element of the operating environment is the ADF's need to defend Australia without relying on the combat forces of other countries. However, our deepening interdependence with the forces of our allies and the global military-industrial system means that self-reliance will increasingly not mean self-sufficiency. The ADF will operate with support from multiple global sources, in the form of enabling capabilities such as intelligence, surveillance and reconnaissance, communications and the supply of essential war stocks and sustainment.

As in much of the western world, the population in Australia is aging. The ADF of the future will face increasing competition in recruiting high-calibre young men and women.





There is an established need to expand the ADF from its current strength of approximately 50,000 to about 58,000 people. This will be a challenging task, as will maintaining the force at that size into the future. Mitigation strategies that reduce the ADF's dependency on a large body of young people will need to be adopted. This will require the enhancement of human capacity through technological innovation.

The growth in the Australian economy over the past decade has allowed the Australian Government to invest in Defence at a level not seen since the Vietnam War. The commodities boom that has, in large part, fuelled the growth in the Australian economy can not reasonably be expected to continue indefinitely. In developing the future force we must be aware of the recurrent costs associated with the operation of complex capabilities and increases in the number of personnel.

Australia's security is very much dependent on international relationships. Whether we look at the primacy of the Australia–United States alliance or at Australia's contribution to shaping the regional security landscape through diplomacy, aid and Defence engagement, we find the outcomes for Australia's security are similar. These relationships reduce the likelihood of conflict occurring in the first place; in the event that conflict occurs, they limit the scope and extent of adverse effects. Australia will need to continue to invest heavily in developing and maintaining its strategically important international relationships, and Defence must continue to play a significant role in this endeavour.

Capability warning time (the time between a contingency arising and the need for the ADF to produce a responding capability eventuating) and crisis warning time (the time between Australia learning that a crisis might occur and that crisis taking place) are both reducing. Evidence suggests that, for most likely contingencies, future adversaries would be able to acquire the capability or capacity to threaten Australia or our national interests before we could develop a capability edge to counter that threat. Recent history has shown that crises can arise with very little or no warning, and the future is likely to be no better (and probably worse) in this regard.

These factors make it vital that we increase intelligence capabilities to provide sufficient warning time to the ADF and capability developers.

The brevity of both capability and crisis warning time almost ensures that we will join the fight in the future as a 'come as you are' force.

RESPONDING TO UNCERTAINTY

We will manage risk by ensuring that the ADF is a balanced force with the right capabilities to meet the uncertain demands of the future and the strategies to sustain, acquire or retire these capabilities at acceptable cost and in a timely manner.

Capabilities will need to be developed such that our:

- **Army** has sufficient agility, adaptability, combat weight and readiness to sustain combat operations across the spectrum of conflict in high levels of operational uncertainty
- **Navy** generates force projection and control. It is capable of breaking out of port, transiting across blue water, through choke points and establishing control in the littoral



- **Air Force** has a qualitative air combat edge, antisubmarine warfare capabilities and survivable long-range strike, supported by surveillance and reconnaissance, intra- and inter-theatre air lift and combat support elements
- **intelligence** capabilities retain a qualitative edge.

Our pursuit of joint force capabilities will significantly improve ADF capacity. These are system-wide capabilities that are able to bind single-service capabilities and structures into a synergistic whole. It is these single Service capabilities and structures that lie at the heart of joint and integrated force effectiveness.

EXPANDING OUR ROLE

A fundamental responsibility of the ADF is to prevent or defeat any armed attack on Australia. The future force will need to be able to deter and, if necessary, defeat any potential adversary seeking to launch attacks on Australia, as well as to deny operational freedom to any such adversary. In particular, the ADF must develop and maintain the ability to:

- **understand** the geopolitical and operational context and maintain appropriate situational awareness
- **shape** (and **deter**) the choices of potential adversaries seeking to directly attack Australia or its interests
- **defeat** any potential adversary seeking to launch attacks on Australia
- **deny** operational freedom to any potential adversary or security threat within the immediate neighbourhood
- quickly and decisively **assist** the civil authorities of Australia by providing military assistance.

However, the Australian Government relies on the ADF to perform a broader role than conventional warfighting in defence of Australia's national interests. In addition to this fundamental role, the aspiration for the ADF is to be able to contribute to the security of the region. We will achieve this through our leadership role in the South West Pacific and our close working partnerships with the nations of South East Asia. We will also seek to build greater security partnerships and cooperation with the nations of the Asia Pacific. Finally we will make tangible and consequential contributions to the security of the international environment more broadly.

These aspirations are not constrained necessarily by geographic limit, but will reflect our national interests in relation to the prevailing circumstances. For example, close to home Australia will become more engaged in ensuring security. As the largest and most prosperous country in the region, Australia has a responsibility to use our size and capability to help our neighbours deal with internal insecurity and external threats. We must expect that in the future Australia will conduct stabilisation operations (such as those in the Solomon Islands and East Timor) more regularly than in the past.



History demonstrates that stabilising nations is not achieved quickly, and that stabilisation operations require a considerable commitment across all elements of national and/or international power. These range from military security and law and order to development assistance and governance arrangements, and will have multi-agency, multi-jurisdictional and multinational aspects.

Further abroad, Australia will continue to be a significant contributor to multinational security arrangements. Whether in a leadership role or as a major contributor to coalition activities, Australia will support a regional security environment that promotes economic and political stability. States in South East Asia will continue to look to Australia to help them build capacity to meet their own security needs and to assist them in responding to events beyond their individual abilities. Australia's emphasis will be on counter-terrorism and counter-proliferation, maritime and border security, the professionalisation of security services and improved national and international governance mechanisms. More globally, Australia will continue to work with friends and allies to improve strategic stability, enhance confidence and develop transparency and trust. Australia could expect to make a significant contribution to such efforts, within the scope of our size and resources.



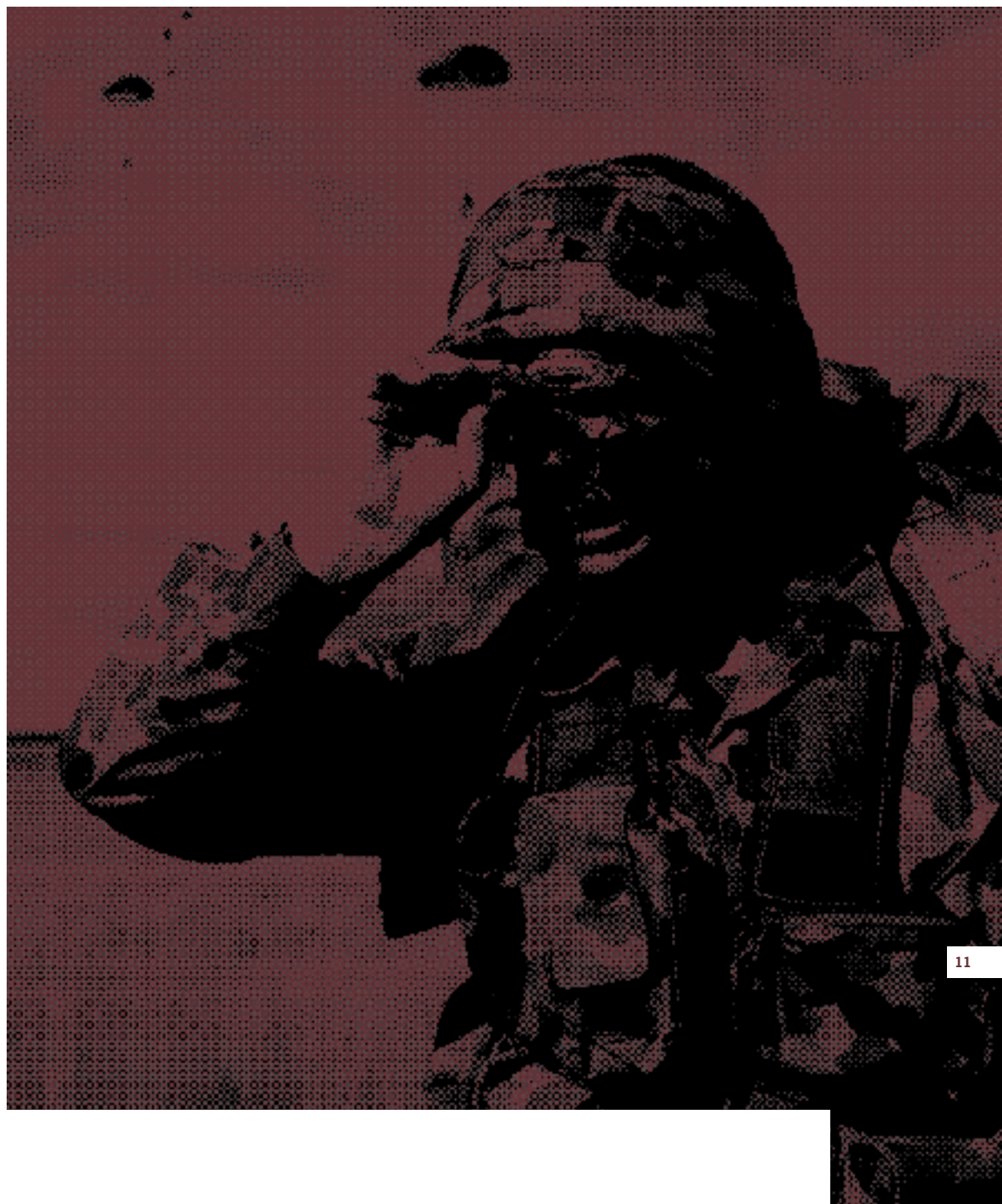
- 1 The ADF will be balanced, networked and deployable.
(Pictured: a rapid deployment company from Townsville deploys in support of the RAMSI mission in response to a rapidly evolving situation, 2004.)
- 2 The ADF of the future will continue to operate in complex environments across a range of activities.
(Pictured: ADF on patrol in Dili as part of OP ASTUTE 2007.)

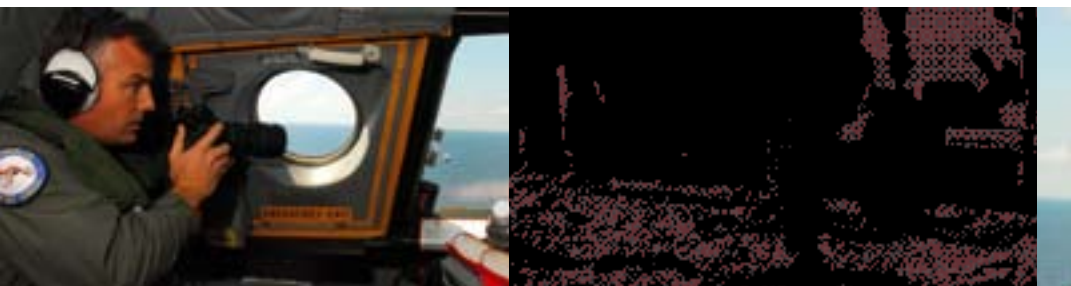
THE FUTURE JOINT OPERATING CONCEPT

THE NATIONAL EFFECTS-BASED APPROACH

A national effects-based approach underlies Australia's current approach to security, and will be the basis of defence operations for the foreseeable future. It involves taking a whole-of-nation view of security to find the most appropriate tool to achieve national objectives. Tools may be drawn from the elements of national power, and provide diplomatic, economic, informational and military options. In deciding which tool to apply, the Government is likely to consider the Australian interests involved, the preferred way to affect the adversary's will, and the goals and capabilities of our coalition partners. Therefore, Defence will not be the only agency, and sometimes will not be the leading agency, for dealing with security problems in the future.

The national effects-based approach views our nation and our enemy as operating in a global system which has political, economic, military and social dimensions, where actions in one dimension (e.g. the economic) can have ripple effects in other domains (e.g. the military). Thinking about the world in this way allows us to consider our actions both in terms of their immediate impact, and in terms of their 'lower order' or consequent effects. We need to understand the adversary well enough to see the costs and benefits of a particular course from their perspective, and not think of their perspective as a mirror of our own. Contributions from other Australian agencies and coalition partners will help us to achieve this understanding.





The national effects-based approach is applied through effects-based operations (EBO). EBO is defined as the application of military and non-military capabilities to realise specific and desired strategic and operational outcomes in peace, tension, conflict and post-conflict situations. From the military perspective, EBO is more than just targeting and destroying an adversary's capacity to fight, although it includes these aspects of warfare. It is important to understand that EBO is more about a way of thinking and planning, and therefore about training our people, than about technology alone.

NETWORK-CENTRIC WARFARE

The ADF has embraced the implementation of network-centric warfare (NCW) as a key enabler of the future force, as detailed in the Network Centric Warfare Roadmap 2007. Network-centricity will help us to link ADF, Australian and coalition sensors, engagement systems and decision-makers into an effective and responsive whole. NCW seeks to provide the future force with the ability to generate tempo, precision and combat power through shared situational awareness, clear procedures, and the information connectivity needed to synchronise our actions to meet the commander's intent.

The real challenge will be in extending the network to other agencies in the national effects-based approach. Networks that extend to agencies outside of the ADF and Defence will need to be tailored to allow them to perform their roles and tasks relative to the contingency. One method might be to distribute a baseline capability that can be expanded rapidly to meet changing circumstances.

An integrated force

Through NCW, the ADF will continue the transition from a joint construct to an integrated force. The creation of Headquarters Joint Operations Command at Bungendore, New South Wales, has set the benchmark for integration. The benefits of having an integrated joint force are numerous, and will critically include improved intelligence, surveillance and reconnaissance data.

It will result in enhanced, integrated command and control structures that enable the forces to be employed in a more coherent and effective manner.

As we become an integrated force, we must do so in a manner that does not weaken the great strength that comes from our professional mastery. Professional mastery requires a certain critical mass in terms of experience, education and training whereby a group of individuals can exhibit a level of mastery in excess of the sum of the individuals' mastery.

An integrated response

As noted, Defence may not always be the lead agency for dealing with security challenges. An integrated, multi-agency response capability will be a key to success in the future strategic environment. The ADF and Defence will work in cooperation with other government and non-government agencies (where appropriate) to develop the capability for an integrated multi-agency response capability. This capability will capitalise on the successful cooperative efforts demonstrated during previous operations at the tactical and operational levels.



A first step in this process will be the inclusion of agencies with recurring and major roles in response operations, such as the Australian Federal Police and the Department of Foreign Affairs and Trade. Representatives of such organisations will be involved not as liaison officers but as integrated parts of the planning and operations staff.

MULTIDIMENSIONAL MANOEUVRE

In Future Warfighting Concept 2003 the ADF adopted Multidimensional Manoeuvre (MDM) as its approach to future warfare. MDM seeks to negate the adversary's strategy through the intelligent and creative application of an effects-based approach against an adversary's critical vulnerabilities. It uses an indirect approach to defeat the adversary's will to oppose us. MDM becomes reality through the application of tailored strategic responses to achieve the desired effects. A fundamental of MDM is the ability to employ NCW and operate in joint task force, interagency and/or coalition arrangements to conduct effective operations.

Current defence operating guidance draws on a strategic framework that has two components: pervasive and ongoing activities, and focused strategic response options. The objectives these responses seek to achieve are accomplished by designing operations to focus on specific and achievable effects, and integrating joint warfighting functions (**force application, force deployment, force protection, force generation and sustainment, command and control and knowledge dominance**). Effects will occur sequentially and/or simultaneously based on the conditions and the desired end state that the military strategy articulates for any response option.

Creating a dilemma

MDM requires the ability to create a dilemma for an adversary. This task requires a deep understanding of the adversary, the environment and the capability of our own forces. It also requires an understanding of how the adversary views their goals and our capabilities. This is achieved through net assessment at the strategic level and Joint Intelligence Preparation of the Battlespace at the operational level. These processes involve the reciprocal exchange of information between different levels of command, across government agencies and with our coalition partners. Secure communication networks will provide us with a significant advantage, especially by allowing people located in different areas to collaborate in real time.

The insights developed through strategic assessment and Joint Intelligence Preparation of the Battlespace are used to decide on the course of action through a joint planning process involving other agencies and, possibly, coalition partners.



Potential courses of action are evaluated, wherever possible, with simulations and wargaming to test the plan and identify any negative consequences of the actions or new opportunities. The process takes into account the potential actions of other government departments or agencies, since military options alone will seldom achieve the required effect.

MDM includes non-military and military options which are applied to achieve complementary effects. The aim is to develop multiple operations that combine to present the adversary with a dilemma that they cannot resolve. For example, in a military context, deceiving the adversary so that they disperse scarce resources to protect assets which one does not need to strike to achieve one's aim can create a dilemma. In a wider context, threatening the personal wealth of an adversary's leaders can also create a dilemma by forcing the leaders to choose between private interests and political goals. NCW will inform and enable the force of the future to pursue multiple operations effectively.

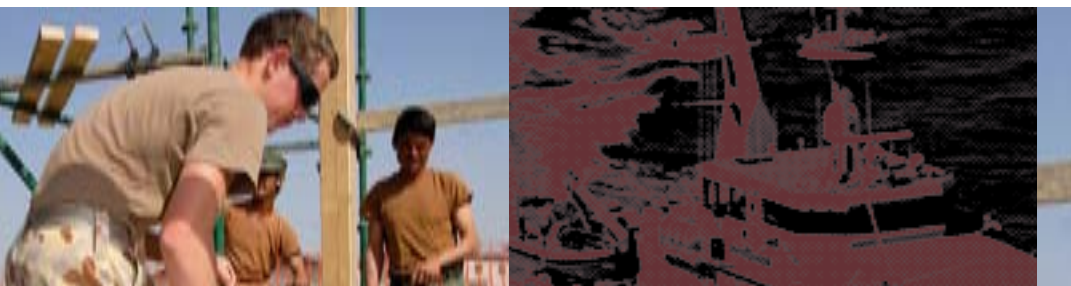
Warfighting

We must develop MDM into a warfighting doctrine that gives the future ADF an advantage over potential adversaries, while ensuring that we remain interoperable with our coalition partners. Developing a better understanding of how the joint warfighting functions will change the way we fight is an important part of this task. We will use the joint warfighting functions to unify our force operational design effort to meet future needs.

The following joint warfighting functions comprise a simple model that describes what future military forces will have to do in order to be effective. These functions are mutually supportive and there is some overlap.

In the future, **force application** will apply lethal force both in close combat and from standoff ranges. Precision and discrimination will require more than just guided weapons. Achieving discriminating effects will require a reliable way to locate and identify hostile, friendly and neutral forces; the ability to conduct precise engagements at ranges varying from close to extended distances; and the ability to control the extent of damage. Additionally, as non-lethal force options become more readily available and effectively utilised, they will provide a wider range of options to the force commander.

Force deployment is the ability move the force from its home bases to the places where it can generate the required effects. Forces will be deployed such that they arrive in the area of operations ready to engage in immediate combat if required.



Future joint task forces will be structured and formed so that force elements can combine to protect each other to maintain the commander's freedom of action. The grouping of units into balanced organisations, and techniques such as early warning, deception, camouflage, dispersion and stealth, contribute to **force protection**. Force protection is important for all phases of an operation: starting with protective security in home bases, in transit to and from the area of operations, and on operations themselves.

Force generation and sustainment will reduce the future force's vulnerabilities and increase its mobility, by ensuring the ability to reach back to the sustainment base and access focused sustainment for the majority of logistic requirements. Only critical logistics requirements will be positioned forward. Future forces will aim to operate efficiently with reduced personnel and logistic overheads. Force generation will apply to the ability to employ available forces rather than rely on mobilisation.

The future force's **command and control** system will exercise mission command through a network-centric approach. Technical improvements will help communications and decision making, and the ability to make sound and intuitive judgments in ambiguous situations will be a highly valued quality for all members of the future force. Joint Interagency Task Force headquarters will be capable of commanding assigned Australian and coalition forces.

To achieve **knowledge dominance** the future force will use NCW as a means of organising the force using modern information technology to link sensors, decision makers and weapon systems in order to help people work more effectively. This allows for a common and enhanced battlespace awareness that facilitates the ability to deliver optimum combat effects. Knowledge dominance is supported through superior information capabilities, which in turn require a secure infrastructure that supports the collection and distribution of analysed information to friendly forces. To achieve knowledge dominance, the future force will be required to identify, prioritise and utilise the information superiority it achieves.

Joint Operations Concept

The joint operational concept underlying MDM can be described in terms of the ability to **reach, know** and **exploit**¹.

Reach. Australia's future force will effectively access, coordinate and employ essential capabilities both inside and outside the operational area in order to achieve our national strategic objectives. Reach describes the future force's ability to operate in multiple dimensions and across the physical, virtual and human domains in order to understand and shape the environment; deter, defeat and deny the adversary; and provide military assistance in support of our national interests. Reach is best accomplished as part of an integrated whole-of-government approach across the spectrum of military, diplomatic, economic and informational actions.

Know. The future force will build and sustain sufficient knowledge within and across national and international sources to allow it to identify required actions and, importantly, assess the effects of its actions. We will understand ourselves and our capabilities, those of our adversaries, as well as our operating environment, which will enable us to better

¹ This way of describing the joint operational concept has been adapted from the fundamental joint actions described in United States Department of Defence, J-7 Joint Experimentation, Transformation and Concepts Division, *Capstone Concept for Joint Operations*, Washington DC, August 2005.



employ and integrate our joint and multi-agency actions in order to create decisive effects. Information is at the base of knowledge dominance, and knowing requires that the future force is able to utilise and integrate information from strategic, operational and tactical sources, both military and civilian. However, information must be turned into knowledge that is timely, relevant and accurate. This knowledge must be acquired, prioritised, refined and shared vertically (strategic, operational and tactical levels) and horizontally (within the joint force and as part of multi-agency and multinational efforts).

Exploit. The future force will integrate its joint capabilities with other elements of national power in order to achieve effects in support of our national strategic objectives. Effects are the outcomes of the actions taken to change unacceptable conditions, behaviours, or to create freedom of action to achieve desired objectives. The force will identify, create and exploit effects through acquiring knowledge and establishing reach. To exploit our capability to produce effects in the future environment, the future force will continually assess its effects and adjust its actions in order to take into account the iterative operation of our military, diplomatic, economic and informational actions that are taken as part of our whole-of-government approach.

Producing effects

The ADF's ability to produce effects requires capability. Two of the key components of capability are the use of joint task forces and preparedness.

Task-organised **joint task forces**, drawn from the force structure that exists at the time, will generate the effects identified as crucial to achieving objectives. Our future forces might need to conduct a wide range of warfighting and other operations simultaneously. Therefore, the joint task force must be able to be adapted without compromising any of its functions. In the future, we may see advantages in creating interdepartmental or interagency coordinating groups at the operational level, either temporarily or permanently, to ensure that our whole-of-nation effects are properly synchronised.

Preparedness requires that the force pays balanced attention to the fundamental inputs to capability while allocating resources based on strategic priorities.² Preparedness also considers how to balance other needs, including conducting concurrent actions within the same campaign, such as protecting important bases and infrastructure, and reacting to new crises elsewhere.

While not part of our capability, contributions from **allies and coalition partners** are likely provide valuable assistance in operations. The ADF will be prepared to fight alongside Australia's allies and coalition partners using MDM. We may be required to lead coalitions under some circumstances. Consequently, MDM will be developed with due consideration of our allies' warfighting concepts, as well as those of our potential coalition partners.

Our whole-of-nation approach, focus on effects, and desire to include coalition partners at every stage will influence the way we plan to achieve our future strategic objectives. For example, the idea that information is important to operations is not new, but the way we use NCW to increase our situational awareness and ability to apply the right effect is new.

² The fundamental inputs to capability include personnel, collective training, organisation, major systems, supplies, facilities, support, and command and management.



Similarly, the concept of creating a dilemma for an adversary is familiar to us. However, generating situations that lead to a dilemma for an adversary will require a different approach to selecting options and a more versatile force – one that can conduct more than one operation at a time, and produce effects on different critical vulnerabilities at or near the same time.

Applying Multidimensional Manoeuvre

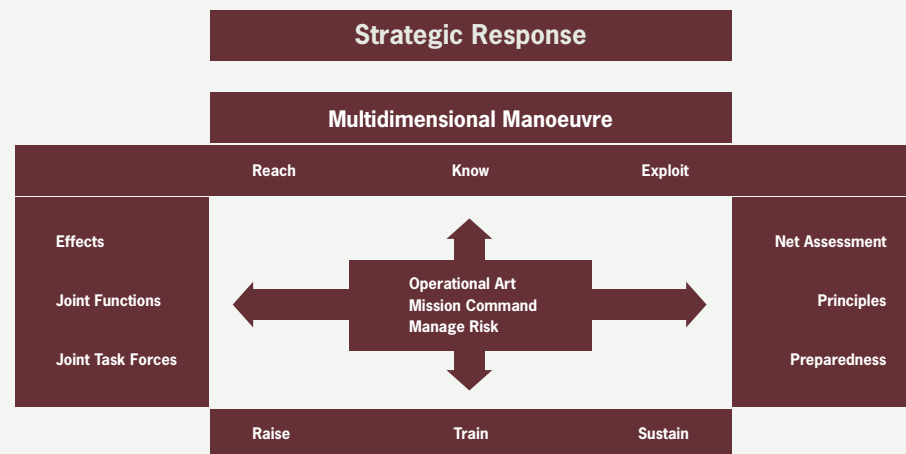
The following sections set out the practical issues that the future force will have to consider in applying MDM effectively.

Tempo places our action within a competitive cycle relative to our adversary. While developing a faster tempo than our adversaries is generally desirable in a conventional

conflict, having a slower tempo may be more effective in a non-linear and non-contiguous battlespace. Therefore, our aim must be to achieve an optimal tempo that allows us to gain and then maintain the advantage. Improving the commander's situational awareness is critical to controlling tempo, which makes a network-centric approach important.

Agility, which is the ability to change from one type of activity to another in time to be effective, is inherent in the idea of tempo. The quality of agility – as a characteristic of our force structure, planning and training – will be important in future operations. We cannot expect to start from a position of advantage in a conflict, so the ability to adapt in order to regain the initiative will be essential.

The impact of the force is increased when a number of different effects are created on the adversary's system at the right times and right places. **Simultaneity** aims to create one or more dilemmas that prevent the adversary from reacting in time to be effective. The possession of different options for creating effects, as well as the synchronisation of military and non-military effects towards a unified aim, will help to achieve simultaneity.





A conventional military force can **fight asymmetrically**, which demands that we tailor our operations so that we do not have to fight like with like, or can avoid battle on unfavourable terms. This may include **dissimilarity**, whereby we apply forces in a way that the adversary is not expecting, and **overmatching at decisive points**, whereby we create more or greater effects than the adversary can counter. We can achieve effective asymmetry against most adversaries by using our conventional forces to apply coercion or direct pressure in unconventional ways. In the future, fighting asymmetrically may involve using lethal and non-lethal force, acting in concert with other elements of national power, or acting against critical vulnerabilities that are not usually the focus of military operations. Increasingly, these effects will be produced from both kinetic and non-kinetic weapons.

Deception and surprise are parts of an asymmetric attitude that refuses to accept conflict on the adversary's terms. Surprise is created when the adversary is unable to react effectively to our initiatives in time. Deception is created by measures that mislead the adversary. In the future, synchronised surprise and deception will be integral to our efforts to generate shock and thus create desired effects.

To fulfil its role both within Australia and beyond, the future ADF must be capable of **deploying and sustaining forces** over great distances. Many areas where we will operate will be remote from modern services – some will have been devastated by conflict. While we might rely on support from coalition partners or host nations when we are deployed further away, we will need to be more self-sufficient for operations closer to home. Regardless of the location, ADF task forces will be prepared so that they can be deployed in time to be effective and in formations that allow them to fight immediately on arrival. Effective sustainment will be based on using available national, international or host nation support to ensure that the force can remain in the battlespace for the required time.



3 The ADF will continue to work closely with the AFP and other agencies as part of its move toward a fully integrated national effects based approach. (Pictured: The RAN escorts AFP personnel as part of the RAMSI mission in the Solomon Islands, 2003.)

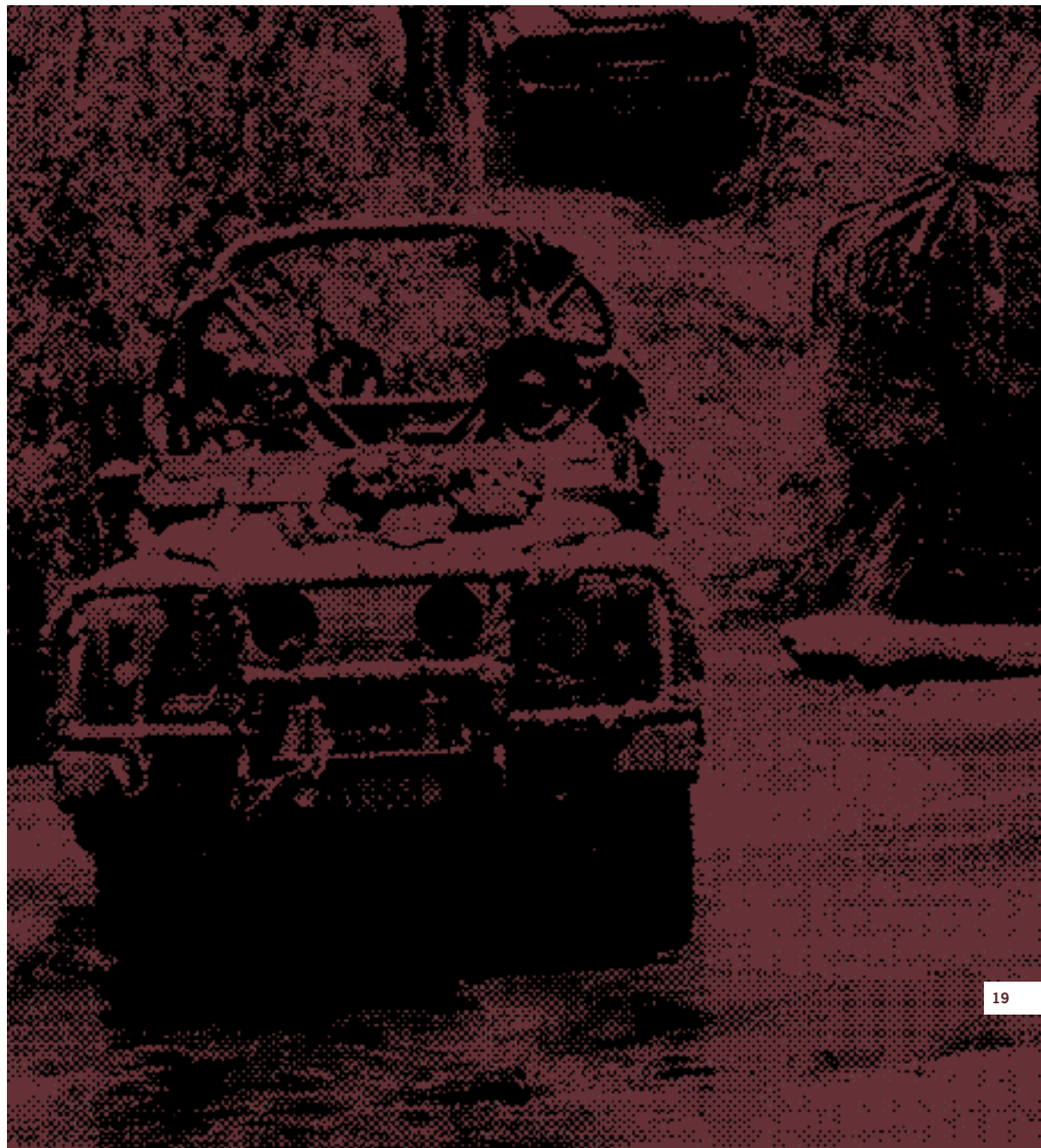
4 The ADF will continue to integrate advanced manned and unmanned technologies as part of its joint efforts in warfighting. (Pictured: a test of a Mariner demonstrator UAV operating with Armidale class patrol boat, 2006.)

THE FUTURE FORCE

PROFESSIONAL MASTERY

The importance the ADF places on professional mastery is based on our understanding of the chaos of war, and the recognition that morale and intellect are central to warfighting effectiveness. Professional mastery aims to get beyond equipment and force structures to ensure that the people in the future force will be placed to cope with new challenges and conflicts.

Our doctrine, education and training systems are central to developing professional mastery, as they promote the individual's analytical and intuitive skills, create trust and build teams. In addition to training the force to be more proficient, we must develop mental toughness and strength of character within our members. Consequently, leaders at all levels will need to take a personal interest in guiding their people towards professional mastery and ensuring that people are selected for the right jobs.





The following elements of professional mastery are developmental imperatives:

- **Operational art** is at the centre of our thinking on the conduct of war³. Operational art is the skilful employment of military forces to attain strategic goals through the design, organisation, sequencing and direction of campaigns and major operations. It translates strategy into operational and, ultimately, tactical action. **Systems thinking** is a useful complement to the operational art, because it encourages the development of understanding about both the adversary and ourselves as systems that interact both together and within broader systems. Systems thinking also helps us to see how activities such as shaping the battlespace can create opportunities for us later in the campaign.
- Developing an ability to identify and **manage risk** allows our people to function in situations of extreme ambiguity while understanding the potential implications of situational changes. This attitude needs to be developed in training, by inculcating processes including safety and risk management, and carried through into operations.
- Commanders exploit the benefits of mission command, which is a decentralised command philosophy that focuses on achieving intent. In the future, this will occur within an information environment that offers significantly greater situational awareness than has been experienced in the recent past. Professional mastery involves recognising the fact that information can be both a boon and a burden in hierarchical organisations. The future force will emphasise the need to provide an appropriate level of detail to the right person at the right time to enable mission command.

ATTRIBUTES OF THE FUTURE FORCE

The following sections describe the attributes that will define the ADF of the future.

Balanced – The future force must possess an appropriate mix of capabilities in order to mount the range of operations envisaged. The force must have the capability to conduct multiple responses and not rely on ‘niche’ capability.

Networked – The future force will need assured access to other agency, coalition and open source information capabilities. The ability to operate effectively will be contingent on the integrated forces’ networks and decision-making infrastructures, early warning systems, communications, environmental monitoring and positional data. Adversaries may exploit any vulnerability in the nation’s network to undermine cohesion and effectiveness.

³ Our current approach to operational art is described in the Australian Defence Doctrine Publication series, especially ADDP 3 – Operations.



Deployable – In the future, the ADF will need to operate at a distance from established bases in Australia, either independently or with coalition forces. This might range from deployments within Australia including its territories, to deployments with regional or global reach. Force elements will need to be configured and prepared for short-notice deployments that can be sustained with limited infrastructure support. This will require either a capability to lift forces into the contingency area or basing rights close to the contingency area. A forced-entry capability will also be critical to our ability to respond to possible contingencies.

Integrated and Interoperable – The ADF must continue the transition to a force with fully integrated services that is interoperable with other agencies of the government and its coalition partners and allies. Legacy systems should, to the extent possible, be made to function in the integrated environment until replaced. As the degree of integration and synchronisation is increased, new training and systems will need to be established. Military capabilities should be designed to be interoperable from conception, not as an afterthought in the development process.

Survivable and Robust – Each element of the future force must be able to protect itself against the range of existing and evolving threats. Timely investment in lower signatures, protection, countermeasures and redundancy to match likely threats will be required.

Ready and Responsive – The future ADF must observe, anticipate and be prepared to serve Australia's global interest in an evolving strategic and geopolitical situation.

Agile and Versatile – The future ADF must be able to respond rapidly to a diverse range of missions and tasks. This will require versatile forces that are tailored and scalable for deployment. They will need an ability, the extent of which will be dictated by force structure, to re-form, reconstitute, regroup and re-engage, especially during periods of concurrent operations.

Precise and Discriminating – The goal for future operations is to achieve precise effects, with minimum planning and response time, from a distance if required. For the future ADF, precision must be not limited to the mere application of kinetic force, but also incorporated into executing information operations and minimising unintended consequences. While traditional technology will initially provide the potential to improve precision, emergent technology must be used to support widespread cross-platform responses that ensure maximum flexibility and discrimination. Enhanced discrimination capabilities will permit high-value targets to be struck with greater certainty.

Lethal and Non-lethal – The ADF must increase its capability to produce desired effects through the considered and coordinated use of both lethal and non-lethal methods, using both kinetic and non-kinetic means. These effects will be enhanced by leveraging technology advances which improve precision and discrimination, and by employing a whole-of-nation approach.



Persistent and Poised – Persistence ensures that the joint force has the required endurance at all levels to generate and deploy forces for long periods, while poise ensures that critical fighting elements are within range of a potential target area. Persistence incorporates force protection, logistics, infrastructure development and sustaining the capacity of our people to work and fight. The persistence of the future ADF may necessitate a greater level of force dispersal, leading to a requirement to generate effects from dispersed locations while at the same time being poised to project force at short notice. Poise is achieved through either expanding deployability or securing basing rights close to likely contingency areas.

Sustainable – The increasing mobility, tempo and changeability of future force operations will require an adaptive, modular, network-enabled logistic system operating in a contiguous and non-contiguous mission space.

Capable of Concurrency – The future force must be able to conduct operations in more than one location simultaneously. The Defence Planning Guidance provides guidance on the number and nature of deployed operations across the maritime, land, air and space environments. The major capabilities underpinning these operations will be the effective use of information to command and control forces, the ability to conduct strike operations, and the ability to generate and sustain military forces.

Legal and Ethical – In accordance with ADF core values, the ADF operates within the Australian legal framework and the international Law of Armed Conflict. The future ADF must continue to take pride in operating within an ethical framework, derived from a strong warfighting tradition.



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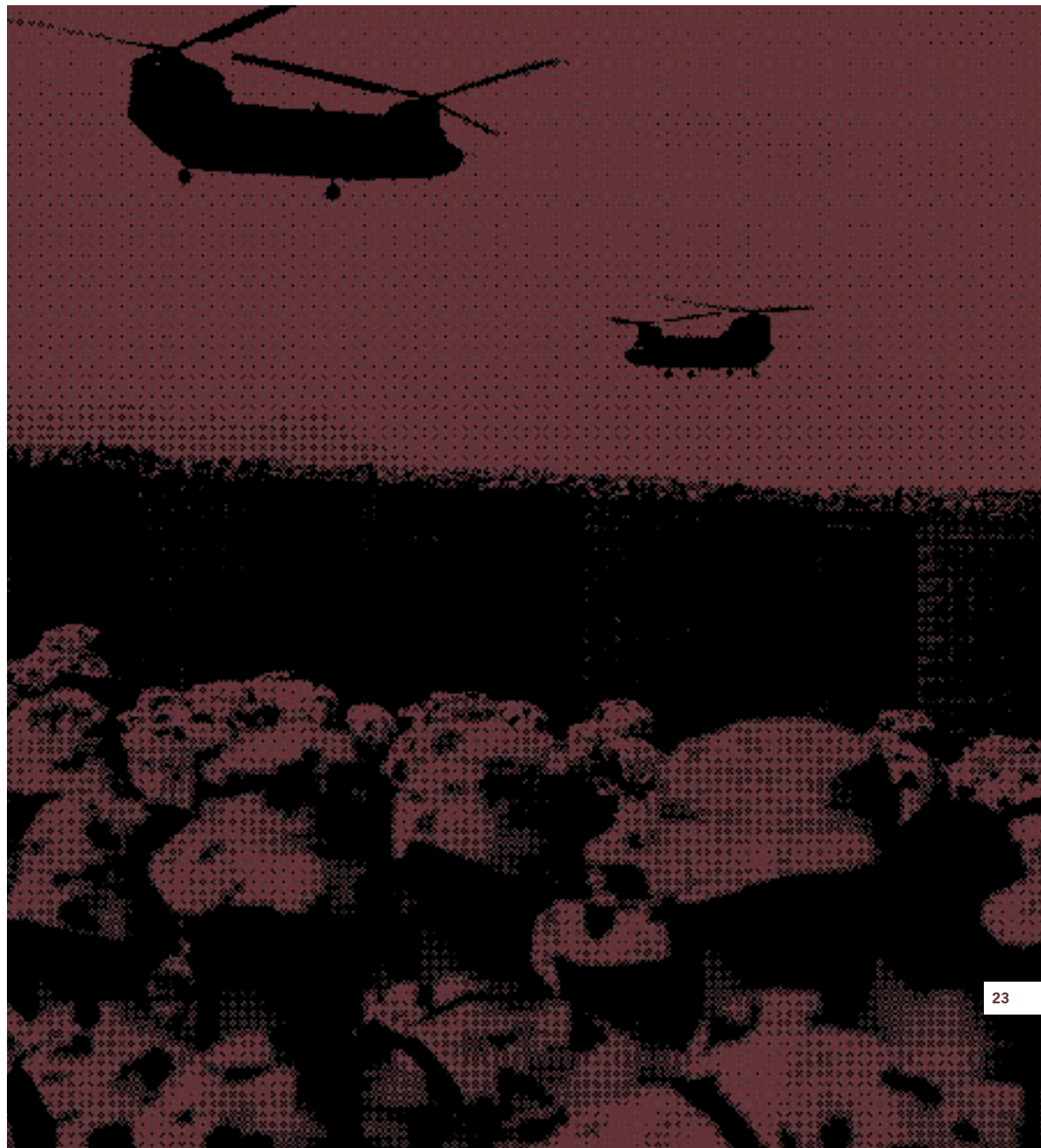
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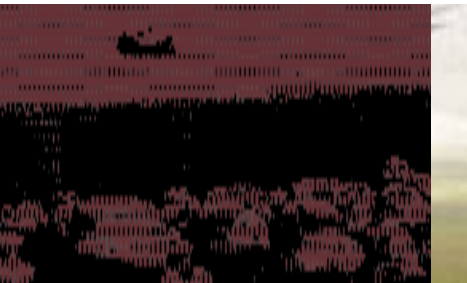
- 5 ADF operations will be integrated across all dimensions of time and space. (Pictured: an Australian soldier releases an Unmanned Aerial Vehicle as part of the ADF's efforts in OP CATALYST, Iraq, 2007.)
- 6 The ADF will continue to operate as part of international efforts to promote regional security. (Pictured: the ADF assists the UN to distribute ballot papers in the first round of elections for the East Timorese presidency as part of OP ASTUTE, 2007.)

CONCLUSION

The first few years of the 21st century have demonstrated that the challenges we face in the strategic environment take many forms. Some are traditional, and relate to state-on-state tensions over territory, resources or the balance and distribution of power. Some are old challenges in new guises, such as the emergence of new terrorist groups and potentially pandemic diseases. Some are natural dangers, such as cyclones, earthquakes, and tsunamis. The uncertainty of the future operating environment requires us to develop new solutions to old and new challenges.

The Chief of the Defence Force has set out a clear vision for the future ADF. Joint Operations for the 21st Century provides a Future Joint Operating Concept (as a component of the Strategic Planning Framework). This is the overarching concept that aligns the force to the Chief of the Defence Force's vision. According to this concept, capabilities will be developed ensure that our Army has sufficient agility, adaptability, combat weight and readiness to sustain combat operations across the spectrum of conflict; our Navy generates force projection and control, and is capable of breaking out of port, transiting across blue water, through choke points and of establishing control in the littoral; our Air Force has a qualitative air combat edge, antisubmarine warfare capabilities and survivable long-range strike, supported by surveillance and reconnaissance, intra- and inter-theatre air lift and combat support elements; and our intelligence capabilities retain a qualitative edge.





The two components of our military strategy – pervasive and ongoing activities, and focused response options – will be achieved by applying MDM under a national effects-based approach. MDM creates effects through operational designs that focus lines of operation on specific and achievable objectives, applying the principles of NCW and integrating joint warfighting functions. The underlying concept of MDM operations can be described as ‘reach, know and exploit’. The ADF’s ability to produce effects and achieve objectives through MDM will be derived from the combination of joint task forces and preparedness, complemented by the human element of professional mastery and other attributes.

The future ADF will continue the transition to becoming seamless force, in which the services will be fully integrated and interoperable with other agencies of the government and with coalition partners and allies.

